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ABSTRACT

Designed to assist physical education teachers realize the benefits of microcomputer usage, this paper presents the case study of a hypothetical middle school teacher who utilizes Apple computers for record-keeping, planning, teaching, and coaching. The case study shows how the computers save time, assist in individualizing instruction, help motivate and interest students, and allow the teacher to communicate with others in her field. In addition, several computer programs and their applications are discussed: (1) Appleworks; (2) Teacher Utilities, Volume 1; (3) Sports Data Services Volleyball Statistics; (4) Petwork (a hypothetical communications network); (5) Project REACT Athletic Scheduling; (6) Attendance Taker; (7) The Factory; (8) Project REACT Bowling; (9) Physical Education Record Keeper; (10) Body Fat Calculator; and (11) Comptech Systems Design Volleyball. A list of references is appended which provides sources for the computer software mentioned in the document. (JB)

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Computers in the Gym:
Friends and Assistants

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Computers in the Gym:

Friends and Assistants

Microcomputers are an ever growing presence in today's schools. More and more schools are setting up computer labs, developing computer literacy curricula, and hiring or appointing computer coordinators. Science and math programs--and to some degree, programs in language arts and social studies--are finding ways of effectively integrating computers into the learning experiences of students. Many teachers regularly use computers at home or in the school to keep records and prepare written materials.

The influx of computers, however, has not yet had much effect on physical educators or physical education programs. Perhaps it is because physical education programs normally take place in locations far removed from where schools usually house their new computers. Perhaps it is because physical educators just do not see the need for or usefulness of computers in their programs.

Assuming that more computers are going to find their way into the schools, the first of the above problems may eventually be solved. The solution to the second problem, though, requires that physical

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educators begin to realize that computers can be of great use to them and their programs--as time saving friends and as helpful assistants. To help physical educators come to this realization, the story of a middle school teacher is presented below. The teacher and the middle school are hypothetical, but the computers and computer software that she uses are not. They are available RIGHT NOW!

Sandy Green and a Day of Computers

Sandy Green is a physical ecucation teacher at Farlow Middle School (grades 5-8). She has an Apple IIC computer at home, and access to three Apple IIE computers housed in a converted equipment room adjacent to the gymnasium at Farlow. Let's see how Sandy used those computers as friends and assistants during the 24 hours from 7:00 pm Wednesday evening to 7:00 pm Thursday.

Wednesday Evening at Home

Sandy's first computer activity on Wednesday evening was the preparation of a ditto master for a soccer task sheet for her first and second period fifth grade classes. She used the Appleworks word processing program (Lissner, 1983) on her Apple IIC. What a time saver! No more taking forever trying (unsuccessfully)

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to type a perfect ditto, then creating a mess making corrections with a needle and a razor blade. Not even worrying about mistakes, Sandy quickly typed the task sheet on her computer, watching the letters and words show up on her monitor screen. In a minute, she then corrected all of her errors, producing a perfect "copy" on the screen. Inserting a blank ditto master into her printer, she gave a simple command to her computer and a perfect task sheet ditto master was created in about 20 seconds.

Next, Sandy "loaded" her Teacher Utilities, Volume 1 program (MECC, 1981) into the computer and chose the "Test Generator" option. A few weeks ago she had entered about 50 multiple choice volleyball test questions into a test file created by the same Teacher Utilities program. Now the message on the monitor screen asked her how many questions she wanted on her test. Sandy typed in "20" for the answer, and inserted the first of two blank ditto masters in her printer. In a minute she had the test ditto masters, with 20 multiple choice volleyball test questions chosen by the computer at random from her file of test questions. In another few seconds she had an answer sheet, also printed by the computer. "What a breeze;" she thought,

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"I can get a different 20 question test any time I want. And I can add or delete questions in my test file whenever I want to."

Sandy then used the Teacher Utilities program for one more purpose: she made up a crossword puzzle as a take home reward for her eighth grade fitness classes which had been doing so well. All she had to do was enter (type in) the answers and their clues on the computer, and in a few minutes the computer kicked out a complete crossword puzzle ditto master. Sandy also could have made a word search puzzle for the class, but she had done that last time.

Now it was time to plan Thursday's classes. Using the Appleworks spreadsheet program (Lissner, 1983), Sandy quickly checked each class's progress in meeting the objectives of the particular unit in which it was involved. As she reviewed the information for each class, a portion of the monitor screen looked something like this:

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File: 7th gr: M-W 3rd REVIEW/ADD/CHANGE Escape: Main Menu

VOLLEYBALL OBJECTIVES AND MINIMUM STANDARDS

NAME	Serve 7/10	Set 5/10	Bump 5/10	Pass 8/10	Writ. Test 75%	Team Work 4/5	Grd. Avg.
Bob A.	5 X	6	4 X	8		4	.79
Sue B.	6 X	5	5	9		5	.86
Vicki C.	7	5	3 X	7 X		2 X	.70
Tom D.	7	4 X	5	8		4	.80
Dave E.	6 X	5	5	7 X		4	.79

After each student's name was a current record of how the student was doing on each objective for the unit. An "X" after a score indicated that the student had not yet met an objective; a blank in a particular column meant that the objective had not been assessed as yet. For the five students in the 7th grade 3rd period class illustrated above, Sandy could quickly see that (a) Bob, Sue, and Dave still needed to work on the serve; (b) only Tom was short of the standard on the set; (c) Bob and Vicki had the bump to work on; (d) Vicki and Dave could use more time with the pass; and (e) Vicki was having trouble working with her team. These students did not take the written test yet; Sandy just made the ditto master a few minutes ago! In any

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case, quick scans of records like the above helped Sandy plan groups and learning experiences for each class. Before starting to use the computer, she did not have the energy or the time to incorporate such individualization into her instruction. Now she could really implement some of the theoretical ideas she learned in her undergraduate and graduate classes.

The spreadsheet illustrated above has also helped Sandy do something else that she had always disliked before--grading. The last column of the class record keeps a running total of each student's current grade average. The computer automatically updates this total every time that Sandy enters or changes a score on one of the objectives listed. Sandy could see on the record above, for example, that Sue would end up with an 86% grade average for the volleyball unit if she did not further improve her performance on the objectives already recorded, and if she performed at her current level on the written test. Sandy loves having this kind of information at her fingertips each time she has to make out grades for the 435 students she teaches. It saves her hours of figuring, and eliminates headaches resulting from hurried and inaccurate calculations.

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After planning Thursday's classes, Sandy still had one more thing to do on her computer. She was the eighth grade girls' volleyball coach and had to pick a travelling team for Friday's match. Sandy liked to be fair and base her selections on past performance; so she loaded her Sports Data Services Volleyball Statistics program (Benson, 1983) into her computer, requested "Cumulative Individual Records," and in a minute had a printout listing all of her players and their game stats for the season to date. Picking her top players from that information was a snap. She used to have to sort through the individual charts for all the games and try to remember (with the help of some quick totals she kept on scratch paper) who was doing well in what areas of play. She never had time to prepare accurate season totals until after the season was over--when the athletic director was bugging her for final records. Now it was just a matter of having her manager enter statistics into the computer after each game, and the computer kept running season totals, accessible whenever Sandy needed them.

Thursday Morning before Class

Sandy's first computer related activity at school on Thursday morning was to check the PETWORK bulletin

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board for messages and announcements. "PETWORK" stands for "P. E. Teachers Network," and the bulletin board is an electronic computer-based subscription information service operated by a retired physical education teacher in the county[1]. Using a modem connecting one of the physical education computers to the regular telephone lines, Sandy dialed in to PETWORK and waited a few seconds for the call to be automatically answered and for the PETWORK MENU to appear on her monitor screen. She selected "Announcements," and the following appeared:

****

GREETINGS FROM PETWORK AT 7:13 A.M. ON THURSDAY, 11/14

Today's Announcements

1. Section IV volleball coaches' meeting will be held next Tuesday, November 19, at 7:00 P.M. at The Pied Piper Restaurant.

2. Cathy Simpson at the Medwick School in Clarendon will be implementing her new seventh grade aerobics program all next week. All interested physical educators are invited to observe. Call the Medwick School at 355-8400 to make arrangements.

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[1] PETWORK does not really exist at present. There are, however, similar computer based communications networks.

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Sandy pressed her return key to get back to the PETWORK MENU, and this time she selected "Messages." After she was asked for and she entered her assigned message code, the following came up on her screen:

****

PETWORK MESSAGES FOR SANDY GREEN:

11/13....8:17 P.M.
Sandy, please let me know if you have any nominations for county all stars. -Barb Jansen

11/13....9:43 P.M.
Thanks for the information on Project Adventure. I am going to try to get our district to set up a ropes course. -Bob Franklin

11/14....7:00 P.M.
Sandy, good luck on Friday's match! -"Killer"

****

Sandy pressed her return key once more, selected "Send Messages," and entered Barb Jansen's message code. On the computer keyboard, she then typed, "Barb, I will get you my all star nominations tomorrow morning." After entering her own name as the message sender, Sandy signed off from PETWORK.

It was then time for one more task before the kids started to show up. Sandy used the Project REACT Athletic Scheduling program (Schuessler, 1983) to prepare a single elimination tournament for the fifth grade soccer intramural program. Responding to

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questions on her monitor screen, Sandy entered the eight team names, indicated which teams were the top seeds, and selected the seeding option she wanted. In a minute, the printer attached to the computer produced the complete tournament bracket chart, with pairings according to the seedings Sandy entered. Sandy posted the chart on her intramural bulletin board and waited for her first period class.

Thursday Morning Classes

Sandy taught six classes on Thursdays. The first two were fifth grade soccer classes; the third morning class was a sixth grade bowling class. Her afternoon schedule consisted of two eighth grade fitness classes and a seventh grade volleyball class. The computers were a part of every class.

Both of the fifth grade classes went about the same. As each student entered the gymnasium, he or she went over to the computer room (converted equipment room) and entered a personal code word on the computer that had been wheeled to the doorway. Each entry prompted this response on the monitor screen: "Welcome to class, [student's name], have a good day." The Attendance Taker program (Hurwitz, 1985) handled this

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check in process, and it saved a few precious minutes in each of Sandy's classes.

As soon as the locker rooms were clear, Sandy went over to the computer in the doorway of the computer room and entered a "Report" command. In seconds, she had a printout of the roster for the day's class and a list of the absentees. As usual, she made a quick count of the students in attendance and checked it against the number of names on the roster. After the first week or so of using the computer to take attendance, the students had learned not to try to check each other in, but Sandy still double checked out of habit.

During the fifth grade classes, most of the students spent their time working on the soccer task sheets which Sandy had prepared the night before and run off before school. Two students in the first class, and one in the second, however, spent part of the period in the computer room. They each worked for a while on a computer program called The Factory (Kosel & Fish, 1983), which was designed to (a) help develop inductive thinking skills, (b) improve visual discrimination and spatial perception, and (c) increase understanding of the concepts of sequence, logic, and

efficiency. These objectives were important to Sandy. Many of the tasks and learning experiences she planned for her students required them to use higher level cognitive processes, and Sandy often provided some remedial activities for those students who had difficulty. The Factory was one of these activities, and the students in all grade levels enjoyed it and learned from it.

A number of students in each of the fifth grade classes also had Sandy check their performances on one or more of the soccer objectives. As soon as each of these students had attempted a skill test, Sandy entered the results in the class Appleworks spreadsheet file which she had reviewed the night before. Using a procedure like this, Sandy always had up to date records of each student in each class.

At the conclusion of each fifth grade class, Sandy reminded the students to check the intramural bulletin board for the soccer tournament pairings which she had posted before school.

The third period sixth grade bowling class began with the usual computerized attendance check in. Looking over the printout, Sandy noticed that Bobby Swanson had returned after missing Tuesday's class on

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how to score in bowling. As the rest of the class then started to work in groups on the four-step approach and ball release (with plastic balls and pins), Bobby began to work in the computer room on the "Scoring" portion of the Project REACT Bowling program (Laden, 1983). (Later in the day Sandy could check the record keeping portion of the program to see how well Bobby had done.)

Three students in the bowling class also had Sandy check their performances on a few of the class objectives; and she effeciently entered their results in the appropriate Appleworks spreadsheet file.

Planning Period

Sandy spent a portion of her after-lunch planning period in the physical education computer room. During the morning some new equipment for her program had been delivered, and she wanted to update her inventory. She also needed to check on the program needs for the next order which would go out some time after the first of the year. Sandy kept her inventory on an Appleworks data base file (Lissner, 1983), a portion of which looked like this on the monitor screen:

File: Equipment

Item	#	Manuf.	Serial No.	Date Rec'd.	Cond.
Bowling Balls	23	Cosom.	19875A	9/81	Good
Bowling Pins	95	Cosom.	19875B	9/81	Good
Cage Balls	3	Snitz	8333267	11/79	Fair
Cage Balls	1	Snitz	8333267	9/84	Exc.

Afternoon Classes

Sandy's fifth and sixth period eighth grade fitness classes were similar. The students in each class checked in on the computer at the start of class. Each student then got a computer printout from a class folder and started working out at one of several stations in the gymnasium.

The printouts had been generated with the Physical Education Record Keeper program (Hurwitz, 1984). Each printout had the student's name on it and some basic biographical and health status information: (a) sex, (b) age, (c) weight, (d) height, (e) heart rate, and (f) blood pressure. Following this was a chart containing (a) 6 fitness test items, (b) the student's scores on the tests, (c) local standards for the tests, (d) indications of on which tests the student had not yet met the standards, and (e) personal goals for the student to work for on the tests. At the bottom of

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each printout were prescriptive messages directing the student to include specific activities in his or her workout, depending on the test results recorded on the chart. One of the printouts looked like this:

NAME: JAN SWENSON B- SEX: YFEMALE C- AGE: 14
D- WEIGHT: 98 E- HEIGHT: 5' 1"
F- HRT. RT: 68 G- B.P.: 125/75

TEST ITEM	UNITS	YOUR SCORE	MIN. STD.	INFO. SCORE	NEED WORK?	YOUR GOAL
H- BODY FAT	%	16	20	15		15
I- 12 MIN. RUN	LAPS	10	12	14	*	12
J- SIT UPS	#/MIN	35	30	44		38
K- PULL UPS	#	1	3	5	*	3
L- SIT AND REACH	INS.	8	5	9		9
M- SHUTTLE RUN	SECS.	15	18	13		14

HERE IS WHAT YOU SHOULD DO TO REACH YOUR GOALS
ON THOSE TESTS IN WHICH YOU NEED WORK:

---

12 MIN. RUN
ENGAGE IN 15 MINUTES OF AEROBIC ACTIVITY EVERY OTHER DAY.

PULL UPS
DO EXERCISES AT STATION 4 AT THE BEGINNING AND END OF EACH CLASS.

One or two students in each fitness class asked Sandy to check them on at least one of the fitness tests. Sandy recorded their new scores on the computer, using the "Review/Change Individual Student Records" portion of the Physical Education Record Keeper program. She then printed out a new personalized report for each student.

In one of the fitness classes, Sandy called over two students who had been absent on the day she had calculated body fat percentages as one of the fitness test items. Using a Body Fat Calculator program (Hurwitz, 1984) on one computer, Sandy entered the appropriate skinfold measurements for the students and got an immediate report of their estimated body fat percentages. She then entered these scores on the record keeping program which was active on one of the other computers, and gave each of these students a new personalized report. Sandy chuckled to herself as she remembered how difficult it had been to keep and report fitness records before she had begun to use computers.

Sandy's last period was a seventh grade volleyball class. After checking in on the computer, most students began working individually or in groups on volleyball tasks, drills, or scrimmages. One student, however, spent fifteen minutes in the computer room reviewing volleyball rules and rotation with the help of the Comptech Systems Design Volleyball program (Miles, 1983). Another student, who was unable to participate because of a badly sprained ankle, used the same program to learn a little extra information about the history of volleyball.

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Thursday Evening at Home

It was just a few minutes before 7:00 pm when Sandy headed for her computer to work on Friday's classes. She had not been involved with any computer related activities since the seventh grade volleyball class; but as she turned on her Apple, she thought about the effects that computers were having on her professional life: She felt more in contact with other physical educators in other schools; she spent less time on record keeping and reporting and had more time for her students, her family, and herself; she was doing a much more effective job individualizing the learning experiences of her students; and she was convinced that her students were more motivated since she had started using computers in her classes.

Sandy also felt good about herself for mastering a new skill. She had originally been a little skeptical about learning how to use computers, and had thought that it would take her a long time to learn enough to start using them. But after a one-day workshop at the University, and an hour or two becoming familiar with each new software program she obtained, she had acquired enough mastery to begin using computers in her teaching and coaching. "I'm a pretty good teacher and

coach!" she thought, "but now let's see about those Friday classes."

References

Benson, S. (1983). Sports Data Services Volleyball [Computer program]. St. Paul, MN: Sports Data Services Co.

Hurwitz, D. (1984). Body Fat Calculator [Computer program]. (Available from author).

Hurwitz, D. (1984). Physical Education Record Keeper [Computer program]. Mobile, AL: Persimmon Software.

Hurwitz, D. (1985). Attendance Taker [Computer program]. Mobile, AL: Persimmon Software.

Kosel, M., and Fish, M. (1983). The Factory [Computer program]. Pleasantville, NY: Sunburst Communications.

Laden, D. (1983). Bowling [Computer program]. Hastings, MN: Project REACT.

Lissner, R. (1983). Appleworks [Computer program]. Cupertino, CA: Apple Computer, Inc.

MECC (Minnesota Educational Computing Consortium). (1982). Teacher Utililties, Volume 1. [Computer program]. St. Paul, MN: MECC.

Miles, D. (1983). Volleyball [Computer program]. Hastings, MN: Computech Systems Design.

Schuessler, J. (1983). Athletic Scheduling [Computer program]. Hastings, MN: Project REACT.

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